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Notice of Allowability	Application No.	Applicant(s)	
	09/830,902	WEISSENBACH ET AL.	
	Examiner	Art Unit	
	Celine X Qian Ph.D.	1636	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *the amendment filed on 1/24/05*.

2. ☒ The allowed claim(s) is/are *32,41-69 and 71*.

3. ☒ The drawings filed on *02 May 2001* are accepted by the Examiner.

4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☒ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

The amendment filed on 1/24/04 has been entered.

An extension of time under 37 CFR 1.136(a) is required in order to make an examiner's amendment which places this application in condition for allowance. During a telephone conversation conducted on 2/17/05, Applicant's representative requested an extension of time for 1 MONTH(S) and authorized the Director to charge Deposit Account No. 02-4800 the required fee for this extension and authorized the following examiner's amendment. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

Claims 1-31. (Cancelled)

32. (Currently Amended) A method for genotypic diagnosis of AD-HSP associated with the presence of at least one mutation on a sequence of the human SPG4 gene, comprising the steps of:

a) obtaining ~~using~~ a biological sample from a patient, ~~characterized in that it includes the following steps:~~

b)~~a)~~ where appropriate, isolation of the genomic DNA from the biological sample to be analyzed, or production of cDNA from the RNA of the biological sample;

c)~~b)~~ specific amplification of said DNA sequence of the human SPG4 gene likely to contain a mutation, using primers comprising a sequence selected from the group consisting of SEQ ID NO:1, at least 15 consecutive nucleotides of SEQ ID NO:1 and, a sequence complementary to SEQ ID NO:1;

d ~~e~~) analysis of the amplification products obtained and comparison of their sequence with the corresponding normal sequence of the human SPG4 gene,

wherein, if the amplification products comprise a sequence associated with the presence of at least one mutation in a sequence of the human SPG4 gene, AD-HSP is diagnosed in the patient.

Claims 33-40. (Cancelled)

41. (Currently Amended) A method for detecting one or more polymorphisms in the human SPG4 gene of a human biological sample, said method comprising:

a) Amplifying human SPG4 gene DNA of the sample thereby obtaining an amplification product,

b) sequencing the amplification product, thereby obtaining a DNA sequence of the amplification product; and

c) comparing the DNA sequence of the amplification product with the DNA sequence of a wild-type human SPG4 gene;

whereby, if the DNA sequence of the amplification product is different from the DNA sequence of the wild-type human SPG4 gene, then one or more polymorphisms in the human SPG4 gene of the sample have been detected.

42. (Currently Amended) The method of claim 41, wherein the DNA in the sample is genomic DNA.

43. (Currently Amended) The method of claim 41, wherein the DNA in the sample is cDNA.

44. (Previously Presented) The method of claim 41, wherein the human biological sample is an antenatal human biological sample.

45. (Previously Presented) The method of claim 41, wherein the human biological sample comprises lymphoblasts.

46. (Previously Presented) The method of claim 41, wherein amplifying the DNA is performed by a method selected from the group consisting of: polymerase chain reaction, strand displacement amplification, transcription-based amplification system, self-sustained sequence replication, nucleic acid sequence based amplification, transcription mediated amplification, ligase chain reaction, repair chain reaction and cycling probe reaction.

47. (Currently Amended) A method for detecting one or more polymorphisms in the human SPG4 gene of a human biological sample, said method comprising:

d) amplifying the human SPG4 gene DNA of the sample thereby obtaining an amplification product,

e) sequencing the amplification product, thereby obtaining a DNA sequence of the amplification product; and

f) comparing the DNA sequence of the amplification product with the DNA sequence of [a] the wild-type human SPG4 gene;

whereby, if the DNA sequence of the amplification product is different from the DNA sequence of the wild-type human SPG4 gene, then one or more polymorphisms in the human SPG4 gene of the sample have been detected,

wherein at least one primer is used, and wherein the primer comprises any of the following:

the complement of nucleotides 383-405 of SEQ ID NO:1;

the complement of nucleotides 10278-10303 of SEQ ID NO:1;

the complement of nucleotides 10262-10236 of SEQ ID NO:1;

nucleotides 33728-33753 of SEQ ID NO:1;

nucleotides 35800-35826 of SEQ ID NO:1;

nucleotides 45058-45083 of SEQ ID NO:1;

nucleotides 62007-62031 of SEQ ID NO:1;

nucleotides 91208-91231 of SEQ ID NO:1;

nucleotides 100783-100808 of SEQ ID NO:1;

nucleotides 9976-9994 of SEQ ID NO:1;

the complement of nucleotides 35802-35821 of SEQ ID NO:1;

nucleotides 10037-10055 of SEQ ID NO:1;

the complement of nucleotides 35751-35770 of SEQ ID NO:1;

nucleotides 10418-10437 of SEQ ID NO:1;

the complement of nucleotides 62373-62390 of SEQ ID NO:1;

nucleotides 61968-61987 of SEQ ID NO:1;

the complement of nucleotides 91202-91220 of SEQ ID NO:1;

nucleotides 62008-62027 of SEQ ID NO:1;

the complement of nucleotides 91182-91201 of SEQ ID NO:1;

nucleotides 83346-83365 of SEQ ID NO:1;

the complement of nucleotides 101044-101062 of SEQ ID NO:1;

the complement of nucleotides 9638-9657 of SEQ ID NO:1;

the complement of nucleotides 10666-10686 of SEQ ID NO:1;

nucleotides 9658-9677 of SEQ ID NO:1;

the complement of nucleotides 10615-10633 of SEQ ID NO:1;

nucleotides 33230-33249 of SEQ ID NO:1;

the complement of nucleotides 33832-33853 of SEQ ID NO:1;

nucleotides 33251-33269 of SEQ ID NO:1;

nucleotides 35065-35085 of SEQ ID NO:1;

the complement of nucleotides 35857-35876 of SEQ ID NO:1;

nucleotides 44934-44953 of SEQ ID NO:1;

the complement of nucleotides 45293-45312 of SEQ ID NO:1;

the complement of nucleotides 45169-45186 of SEQ ID NO:1;

nucleotides 60684-60702 of SEQ ID NO:1;

the complement of nucleotides 61494-61513 of SEQ ID NO:1;

nucleotides 60707-60725 of SEQ ID NO:1;

nucleotides 61660-61679 of SEQ ID NO:1;

the complement of nucleotides 62124-62143 of SEQ ID NO:1;

nucleotides 62267-62285 of SEQ ID NO:1;

the complement of nucleotides 62667-62686 of SEQ ID NO:1;

nucleotides 73071-73090 of SEQ ID NO:1;

the complement of nucleotides 73697-73717 of SEQ ID NO:1;

nucleotides 74168-74187 of SEQ ID NO:1;

the complement of nucleotides 75416-75435 of SEQ ID NO:1;

nucleotides 74553-74574 of SEQ ID NO:1;

nucleotides 82534-82553 of SEQ ID NO:1;

nucleotides 82582-82601 of SEQ ID NO:1;

nucleotides 83044-83062 of SEQ ID NO:1;

the complement of nucleotides 83594-83615 of SEQ ID NO:1;

nucleotides 87840-87859 of SEQ ID NO:1;

the complement of nucleotides 89181-89200 of SEQ ID NO:1;

the complement of nucleotides 88206-88225 of SEQ ID NO:1;

nucleotides 89181-89200 of SEQ ID NO:1;

the complement of nucleotides 90165-90183 of SEQ ID NO:1;

the complement of nucleotides 89833-89852 of SEQ ID NO:1;

nucleotides 90619-90638 of SEQ ID NO:1;

the complement of nucleotides 91675-91694 of SEQ ID NO:1;

the complement of nucleotides 91285-91302 of SEQ ID NO:1;

nucleotides 93216-93236 of SEQ ID NO:1;

the complement of nucleotides 94601-94619 of SEQ ID NO:1;

nucleotides 93340-93360 of SEQ ID NO:1;

nucleotides 100421-100439 of SEQ ID NO:1; and

the complement of nucleotides 100846-100865 of SEQ ID NO:1.

48. (Currently Amended) A method for detecting one or more polymorphisms in the human SPG4 gene of a human biological sample, said method comprising:

a) amplifying the human SPG4 gene DNA of the sample thereby obtaining an amplification product;

b) hybridizing the amplification product with a probe that hybridizes specifically with the DNA of [a] the wild-type human SPG4 gene, to produce a hybridized DNA; and

c) applying a method to detect one or more mismatches in the hybridized DNA;

whereby, if one or more mismatches are detected in the hybridized DNA, then one or more polymorphisms in the human SPG4 gene of the sample have been detected.

49. (Currently Amended) The method of claim 48, wherein the DNA in the sample is genomic DNA.

50. (Currently Amended) The method of claim 48, wherein the DNA in the sample is cDNA.

51. (Previously Presented) The method of claim 48, wherein the human biological sample is an antenatal human biological sample.

52. (Previously Presented) The method of claim 48, wherein the human biological sample comprises lymphoblasts.

53. (Previously Presented) The method of claim 48, wherein amplifying the DNA is performed by a method selected from the group consisting of: polymerase chain reaction, strand displacement amplification, transcription-based amplification system, self-sustained sequence replication, nucleic acid sequence based amplification, transcription mediated amplification, ligase chain reaction, repair chain reaction and cycling probe reaction.

54. (Previously Presented) The method of claim 48, wherein the probe comprises any of the following:

the complement of nucleotides 383-405 of SEQ ID NO:1;

the complement of nucleotides 10278-10303 of SEQ ID NO:1;

the complement of nucleotides 10262-10236 of SEQ ID NO:1;
nucleotides 33728-33753 of SEQ ID NO:1;
nucleotides 35800-35826 of SEQ ID NO:1;
nucleotides 45058-45083 of SEQ ID NO:1;
nucleotides 62007-62031 of SEQ ID NO:1;
nucleotides 91208-91231 of SEQ ID NO:1;
nucleotides 100783-100808 of SEQ ID NO:1;
nucleotides 9976-9994 of SEQ ID NO:1;
the complement of nucleotides 35802-35821 of SEQ ID NO:1;
nucleotides 10037-10055 of SEQ ID NO:1;
the complement of nucleotides 35751-35770 of SEQ ID NO:1;
nucleotides 10418-10437 of SEQ ID NO:1;
the complement of nucleotides 62373-62390 of SEQ ID NO:1;
nucleotides 61968-61987 of SEQ ID NO:1;
the complement of nucleotides 91202-91220 of SEQ ID NO:1;
nucleotides 62008-62027 of SEQ ID NO:1;
the complement of nucleotides 91182-91201 of SEQ ID NO:1;
nucleotides 83346-83365 of SEQ ID NO:1;
the complement of nucleotides 101044-101062 of SEQ ID NO:1;
the complement of nucleotides 9638-9657 of SEQ ID NO:1;
the complement of nucleotides 10666-10686 of SEQ ID NO:1;
nucleotides 9658-9677 of SEQ ID NO:1;
the complement of nucleotides 10615-10633 of SEQ ID NO:1;
nucleotides 33230-33249 of SEQ ID NO:1;
the complement of nucleotides 33832-33853 of SEQ ID NO:1;
nucleotides 33251-33269 of SEQ ID NO:1;
nucleotides 35065-35085 of SEQ ID NO:1;
the complement of nucleotides 35857-35876 of SEQ ID NO:1;
nucleotides 44934-44953 of SEQ ID NO:1;
the complement of nucleotides 45293-45312 of SEQ ID NO:1;

the complement of nucleotides 45169-45186 of SEQ ID NO:1;

nucleotides 60684-60702 of SEQ ID NO:1;

the complement of nucleotides 61494-61513 of SEQ ID NO:1;

nucleotides 60707-60725 of SEQ ID NO:1;

nucleotides 61660-61679 of SEQ ID NO:1;

the complement of nucleotides 62124-62143 of SEQ ID NO:1;

nucleotides 62267-62285 of SEQ ID NO:1;

the complement of nucleotides 62667-62686 of SEQ ID NO:1;

nucleotides 73071-73090 of SEQ ID NO:1;

the complement of nucleotides 73697-73717 of SEQ ID NO:1;

nucleotides 74168-74187 of SEQ ID NO:1;

the complement of nucleotides 75416-75435 of SEQ ID NO:1;

nucleotides 74553-74574 of SEQ ID NO:1;

nucleotides 82534-82553 of SEQ ID NO:1;

nucleotides 82582-82601 of SEQ ID NO:1;

nucleotides 83044-83062 of SEQ ID NO:1;

the complement of nucleotides 83594-83615 of SEQ ID NO:1;

nucleotides 87840-87859 of SEQ ID NO:1;

the complement of nucleotides 89181-89200 of SEQ ID NO:1;

the complement of nucleotides 88206-88225 of SEQ ID NO:1;

nucleotides 89181-89200 of SEQ ID NO:1;

the complement of nucleotides 90165-90183 of SEQ ID NO:1;

the complement of nucleotides 89833-89852 of SEQ ID NO:1;

nucleotides 90619-90638 of SEQ ID NO:1;

the complement of nucleotides 91675-91694 of SEQ ID NO:1;

the complement of nucleotides 91285-91302 of SEQ ID NO:1;

nucleotides 93216-93236 of SEQ ID NO:1;

the complement of nucleotides 94601-94619 of SEQ ID NO:1;

nucleotides 93340-93360 of SEQ ID NO:1;

nucleotides 100421-100439 of SEQ ID NO:1; and

the complement of nucleotides 100846-100865 of SEQ ID NO:1.

55. (Currently Amended) A method for diagnosing the presence or absence of an autosomal dominant hereditary spastic paraplegia in a human, wherein the autosomal dominant hereditary spastic paraplegia is associated with the presence of a mutation in the human SPG4 gene, the method comprising detecting the presence or absence of one or more mutations in the human SPG4 gene in a biological sample obtained from the human, wherein if the biological sample comprises a sequence associated with the presence of at least one mutation in the human SPG4 gene, an autosomal dominant hereditary spastic paraplegia is diagnosed in the human.

56. (Currently Amended) The method of claim 55 wherein detecting the presence or absence of one or more mutations in the human SPG4 gene comprises amplifying DNA of the biological sample obtained from the human using primers, determining the DNA sequence of the amplified product, and comparing the DNA sequence of the amplified product with the DNA sequence of [a] the wild-type human SPG4 gene to detect one or more mutations in the human SPG4 gene in the biological sample.

57. (Currently Amended) The method of claim 56, wherein the DNA in the sample is genomic DNA.

58. (Currently Amended) The method of claim 56, wherein the DNA in the sample is cDNA.

59. (Previously Presented) The method of claim 56, wherein the biological sample is an antenatal human biological sample.

60. (Previously Presented) The method of claim 56, wherein the biological sample comprises lymphoblasts.

61. (Previously Presented) The method of claim 56, wherein amplifying the DNA is performed by a method selected from the group consisting of: polymerase chain reaction, strand displacement amplification, transcription-based amplification system, self-sustained sequence replication, nucleic acid sequence based amplification, transcription mediated amplification, ligase chain reaction, repair chain reaction and cycling probe reaction.

62. (Previously Presented) The method of claim 56, which uses at least one primer comprising any of the following:

the complement of nucleotides 383-405 of SEQ ID NO:1;

the complement of nucleotides 10278-10303 of SEQ ID NO:1;

the complement of nucleotides 10262-10236 of SEQ ID NO:1;

nucleotides 33728-33753 of SEQ ID NO:1;

nucleotides 35800-35826 of SEQ ID NO:1;

nucleotides 45058-45083 of SEQ ID NO:1;

nucleotides 62007-62031 of SEQ ID NO:1;

nucleotides 91208-91231 of SEQ ID NO:1;

nucleotides 100783-100808 of SEQ ID NO:1;

nucleotides 9976-9994 of SEQ ID NO:1;

the complement of nucleotides 35802-35821 of SEQ ID NO:1;

nucleotides 10037-10055 of SEQ ID NO:1;

the complement of nucleotides 35751-35770 of SEQ ID NO:1;

nucleotides 10418-10437 of SEQ ID NO:1;

the complement of nucleotides 62373-62390 of SEQ ID NO:1;

nucleotides 61968-61987 of SEQ ID NO:1;

the complement of nucleotides 91202-91220 of SEQ ID NO:1;

nucleotides 62008-62027 of SEQ ID NO:1;

the complement of nucleotides 91182-91201 of SEQ ID NO:1;

nucleotides 83346-83365 of SEQ ID NO:1;

the complement of nucleotides 101044-101062 of SEQ ID NO:1;

the complement of nucleotides 9638-9657 of SEQ ID NO:1;

the complement of nucleotides 10666-10686 of SEQ ID NO:1;

nucleotides 9658-9677 of SEQ ID NO:1;

the complement of nucleotides 10615-10633 of SEQ ID NO:1;

nucleotides 33230-33249 of SEQ ID NO:1;

the complement of nucleotides 33832-33853 of SEQ ID NO:1;

nucleotides 33251-33269 of SEQ ID NO:1;

nucleotides 35065-35085 of SEQ ID NO:1;

the complement of nucleotides 35857-35876 of SEQ ID NO:1;

nucleotides 44934-44953 of SEQ ID NO:1;

the complement of nucleotides 45293-45312 of SEQ ID NO:1;

the complement of nucleotides 45169-45186 of SEQ ID NO:1;

nucleotides 60684-60702 of SEQ ID NO:1;

the complement of nucleotides 61494-61513 of SEQ ID NO:1;

nucleotides 60707-60725 of SEQ ID NO:1;

nucleotides 61660-61679 of SEQ ID NO:1;

the complement of nucleotides 62124-62143 of SEQ ID NO:1;

nucleotides 62267-62285 of SEQ ID NO:1;

the complement of nucleotides 62667-62686 of SEQ ID NO:1;

nucleotides 73071-73090 of SEQ ID NO:1;

the complement of nucleotides 73697-73717 of SEQ ID NO:1;

nucleotides 74168-74187 of SEQ ID NO:1;

the complement of nucleotides 75416-75435 of SEQ ID NO:1;

nucleotides 74553-74574 of SEQ ID NO:1;

nucleotides 82534-82553 of SEQ ID NO:1;

nucleotides 82582-82601 of SEQ ID NO:1;

nucleotides 83044-83062 of SEQ ID NO:1;

the complement of nucleotides 83594-83615 of SEQ ID NO:1;

nucleotides 87840-87859 of SEQ ID NO:1;

the complement of nucleotides 89181-89200 of SEQ ID NO:1;

the complement of nucleotides 88206-88225 of SEQ ID NO:1;

nucleotides 89181-89200 of SEQ ID NO:1;
the complement of nucleotides 90165-90183 of SEQ ID NO:1;
the complement of nucleotides 89833-89852 of SEQ ID NO:1;
nucleotides 90619-90638 of SEQ ID NO:1;
the complement of nucleotides 91675-91694 of SEQ ID NO:1;
the complement of nucleotides 91285-91302 of SEQ ID NO:1;
nucleotides 93216-93236 of SEQ ID NO:1;
the complement of nucleotides 94601-94619 of SEQ ID NO:1;
nucleotides 93340-93360 of SEQ ID NO:1;
nucleotides 100421-100439 of SEQ ID NO:1; and
the complement of nucleotides 100846-100865 of SEQ ID NO:1.

63. (Currently Amended) The method of claim 55, wherein detecting the presence or absence of a mutation in the human SPG4 gene comprises amplifying DNA of the biological sample obtained from the human, hybridizing the amplified product with a probe that hybridizes specifically with the DNA of [a] the wild-type human SPG4 gene, applying a method to detect the presence of one or more mismatches in the hybridized DNA, wherein the detection of one or more mismatches indicates one or more mutations in the human SPG4 gene in the biological sample.

64. (Currently Amended) The method of claim 63, wherein the DNA in the sample is genomic DNA.

65. (Currently Amended) The method of claim 63, wherein the DNA in the sample is cDNA.

66. (Previously Presented) The method of claim 63, wherein the biological sample is an antenatal human biological sample.

67. (Previously Presented) The method of claim 63, wherein the biological sample comprises lymphoblasts.

68. (Previously Presented) The method of claim 63, wherein amplifying the DNA is performed by a method selected from the group consisting of: polymerase chain reaction, strand displacement amplification, transcription-based amplification system, self-sustained sequence replication, nucleic acid sequence based amplification, transcription mediated amplification, ligase chain reaction, repair chain reaction and cycling probe reaction.

69. (Previously Presented) The method of claim 63, which uses at least one probe comprising any of the following:

the complement of nucleotides 383-405 of SEQ ID NO:1;

the complement of nucleotides 10278-10303 of SEQ ID NO:1;

the complement of nucleotides 10262-10236 of SEQ ID NO:1;

nucleotides 33728-33753 of SEQ ID NO:1;

nucleotides 35800-35826 of SEQ ID NO:1;

nucleotides 45058-45083 of SEQ ID NO:1;

nucleotides 62007-62031 of SEQ ID NO:1;

nucleotides 91208-91231 of SEQ ID NO:1;

nucleotides 100783-100808 of SEQ ID NO:1;

nucleotides 9976-9994 of SEQ ID NO:1;

the complement of nucleotides 35802-35821 of SEQ ID NO:1;

nucleotides 10037-10055 of SEQ ID NO:1;

the complement of nucleotides 35751-35770 of SEQ ID NO:1;

nucleotides 10418-10437 of SEQ ID NO:1;

the complement of nucleotides 62373-62390 of SEQ ID NO:1;

nucleotides 61968-61987 of SEQ ID NO:1;

the complement of nucleotides 91202-91220 of SEQ ID NO:1;

nucleotides 62008-62027 of SEQ ID NO:1;

the complement of nucleotides 91182-91201 of SEQ ID NO:1;

nucleotides 83346-83365 of SEQ ID NO:1;

the complement of nucleotides 101044-101062 of SEQ ID NO:1;

the complement of nucleotides 9638-9657 of SEQ ID NO:1;

the complement of nucleotides 10666-10686 of SEQ ID NO:1;

nucleotides 9658-9677 of SEQ ID NO:1;

the complement of nucleotides 10615-10633 of SEQ ID NO:1;

nucleotides 33230-33249 of SEQ ID NO:1;

the complement of nucleotides 33832-33853 of SEQ ID NO:1;

nucleotides 33251-33269 of SEQ ID NO:1;

nucleotides 35065-35085 of SEQ ID NO:1;

the complement of nucleotides 35857-35876 of SEQ ID NO:1;

nucleotides 44934-44953 of SEQ ID NO:1;

the complement of nucleotides 45293-45312 of SEQ ID NO:1;

the complement of nucleotides 45169-45186 of SEQ ID NO:1;

nucleotides 60684-60702 of SEQ ID NO:1;

the complement of nucleotides 61494-61513 of SEQ ID NO:1;

nucleotides 60707-60725 of SEQ ID NO:1;

nucleotides 61660-61679 of SEQ ID NO:1;

the complement of nucleotides 62124-62143 of SEQ ID NO:1;

nucleotides 62267-62285 of SEQ ID NO:1;

the complement of nucleotides 62667-62686 of SEQ ID NO:1;

nucleotides 73071-73090 of SEQ ID NO:1;

the complement of nucleotides 73697-73717 of SEQ ID NO:1;

nucleotides 74168-74187 of SEQ ID NO:1;

the complement of nucleotides 75416-75435 of SEQ ID NO:1;

nucleotides 74553-74574 of SEQ ID NO:1;

nucleotides 82534-82553 of SEQ ID NO:1;

nucleotides 82582-82601 of SEQ ID NO:1;

nucleotides 83044-83062 of SEQ ID NO:1;

the complement of nucleotides 83594-83615 of SEQ ID NO:1;

nucleotides 87840-87859 of SEQ ID NO:1;

the complement of nucleotides 89181-89200 of SEQ ID NO:1;

the complement of nucleotides 88206-88225 of SEQ ID NO:1;

nucleotides 89181-89200 of SEQ ID NO:1;

the complement of nucleotides 90165-90183 of SEQ ID NO:1;

the complement of nucleotides 89833-89852 of SEQ ID NO:1;

nucleotides 90619-90638 of SEQ ID NO:1;

the complement of nucleotides 91675-91694 of SEQ ID NO:1;

the complement of nucleotides 91285-91302 of SEQ ID NO:1;

nucleotides 93216-93236 of SEQ ID NO:1;

the complement of nucleotides 94601-94619 of SEQ ID NO:1;

nucleotides 93340-93360 of SEQ ID NO:1;

nucleotides 100421-100439 of SEQ ID NO:1; and

the complement of nucleotides 100846-100865 of SEQ ID NO:1.

70. (Cancelled)

71. (Previously Presented) The method of claim 55, wherein the mutation is detected using at least one nucleic acid comprising any of the following:

the complement of nucleotides 383-405 of SEQ ID NO:1;

the complement of nucleotides 10278-10303 of SEQ ID NO:1;

the complement of nucleotides 10262-10236 of SEQ ID NO:1;

nucleotides 33728-33753 of SEQ ID NO:1;

nucleotides 35800-35826 of SEQ ID NO:1;

nucleotides 45058-45083 of SEQ ID NO:1;

nucleotides 62007-62031 of SEQ ID NO:1;

nucleotides 91208-91231 of SEQ ID NO:1;

nucleotides 100783-100808 of SEQ ID NO:1;

nucleotides 9976-9994 of SEQ ID NO:1;

the complement of nucleotides 35802-35821 of SEQ ID NO:1;

nucleotides 10037-10055 of SEQ ID NO:1;

the complement of nucleotides 35751-35770 of SEQ ID NO:1;

nucleotides 10418-10437 of SEQ ID NO:1;

the complement of nucleotides 62373-62390 of SEQ ID NO:1;

nucleotides 61968-61987 of SEQ ID NO:1;

the complement of nucleotides 91202-91220 of SEQ ID NO:1;

nucleotides 62008-62027 of SEQ ID NO:1;

the complement of nucleotides 91182-91201 of SEQ ID NO:1;

nucleotides 83346-83365 of SEQ ID NO:1;

the complement of nucleotides 101044-101062 of SEQ ID NO:1;

the complement of nucleotides 9638-9657 of SEQ ID NO:1;

the complement of nucleotides 10666-10686 of SEQ ID NO:1;

nucleotides 9658-9677 of SEQ ID NO:1;

the complement of nucleotides 10615-10633 of SEQ ID NO:1;

nucleotides 33230-33249 of SEQ ID NO:1;

the complement of nucleotides 33832-33853 of SEQ ID NO:1;

nucleotides 33251-33269 of SEQ ID NO:1;

nucleotides 35065-35085 of SEQ ID NO:1;

the complement of nucleotides 35857-35876 of SEQ ID NO:1;

nucleotides 44934-44953 of SEQ ID NO:1;

the complement of nucleotides 45293-45312 of SEQ ID NO:1;

the complement of nucleotides 45169-45186 of SEQ ID NO:1;

nucleotides 60684-60702 of SEQ ID NO:1;

the complement of nucleotides 61494-61513 of SEQ ID NO:1;

nucleotides 60707-60725 of SEQ ID NO:1;

nucleotides 61660-61679 of SEQ ID NO:1;

the complement of nucleotides 62124-62143 of SEQ ID NO:1;

nucleotides 62267-62285 of SEQ ID NO:1;

the complement of nucleotides 62667-62686 of SEQ ID NO:1;

nucleotides 73071-73090 of SEQ ID NO:1;

the complement of nucleotides 73697-73717 of SEQ ID NO:1;

nucleotides 74168-74187 of SEQ ID NO:1;

the complement of nucleotides 75416-75435 of SEQ ID NO:1;

nucleotides 74553-74574 of SEQ ID NO:1;

nucleotides 82534-82553 of SEQ ID NO:1;

nucleotides 82582-82601 of SEQ ID NO:1;

nucleotides 83044-83062 of SEQ ID NO:1;

the complement of nucleotides 83594-83615 of SEQ ID NO:1;

nucleotides 87840-87859 of SEQ ID NO:1;

the complement of nucleotides 89181-89200 of SEQ ID NO:1;

the complement of nucleotides 88206-88225 of SEQ ID NO:1;

nucleotides 89181-89200 of SEQ ID NO:1;

the complement of nucleotides 90165-90183 of SEQ ID NO:1;

the complement of nucleotides 89833-89852 of SEQ ID NO:1;

nucleotides 90619-90638 of SEQ ID NO:1;

the complement of nucleotides 91675-91694 of SEQ ID NO:1;

the complement of nucleotides 91285-91302 of SEQ ID NO:1;

nucleotides 93216-93236 of SEQ ID NO:1;

the complement of nucleotides 94601-94619 of SEQ ID NO:1;

nucleotides 93340-93360 of SEQ ID NO:1;

nucleotides 100421-100439 of SEQ ID NO:1; and

the complement of nucleotides 100846-100865 of SEQ ID NO:1.

Amend the specification on page 22, line 3 as following:

Figure 2: Nucleic acid (SEQ ID NO:2) and protein sequence (SEQ ID NO:3) of the SPG4 cDNA of spastin.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Celine X Qian Ph.D. whose telephone number is 571-272-0777. The examiner can normally be reached on 9:30-6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Remy Yucel Ph.D. can be reached on 571-272-0781. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Celine X Qian Ph.D.
Examiner
Art Unit 1636

DAVE TRONG NGUYEN
PRIMARY EXAMINER